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STATE OF MONTANA HELENA, MONTANA 59601

John S. Anderson M.D.
DIRECTOR

December 6, 1974

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Gentlemen:

The enclosed Draft Environmental Impact Statement has been prepared for the Western Sunset Condominium Project near Lake Mary Ronan in Lake County, Montana.

Under Montana law, a person or agency has thirty days to submit to this Department comments and/or supply new supplementary information. An additional fifteen days

may be granted upon specific request to an individual or agency. Comments received in response to this draft statement will be summarized and included in the Final Environmental Impact Statement.

You should also be aware that a public hearing regarding this same important land use decision will be held in the Lake County Courthouse, on December 11, 1974 at 7:30 p.m. Written comments and/or personal appearances relative to this matter should be directed to the Lake County Planning Board, Mr. David Erickson Senior Planner, Ronan, Montana 59864.

Sincerely,

Wilbur O. Aikin, P.E.
Public Health Engineer
Environmental Sciences Division

WOA:jh

Enclosure

DRAFT ENVIRONMENTAL IMPACT STATEMENT

WESTERN SUNSET, A Proposed Condominium Development
Near Lake Mary Ronan in Lake County, Montana

Pursuant to the Montana Environmental Policy Act, Section 69-6504, (b) (3), the act controlling both public and private water supply and sewage disposal for subdivision, Section 69-5001 to 69-5005; and the act to control water pollution, Section 69-4801 to 4827, the following Draft Environmental Impact Statement is prepared by the State Department of Health and Environmental Sciences, Environmental Sciences Division, concerning a request for the administrative approval of WESTERN SUNSET, a proposed condominium development near Lake Mary Ronan in Lake County, Montana

INTRODUCTORY NOTE

Existing composite land area ownership of the Western Sunset Development has been shown to be 172 acres. In addition, the preliminary plat for this 172 acres shows that 14 lots are to be parcelled out of this total ownership. The most significant fact to be gained from this observation is that all lots are greater than 10.00 acres in size (15.0 acres is the largest, 10.1 acres is the smallest.)

While all the proposed lots in the subdivision are greater in size than 10 acres and thus would appear to be outside the scope of authority of the Department of Health & Environmental Sciences under Title 69, Chapter 50, R.C.M., 1947, nevertheless two of the proposed lot (1 and 2) are condominium projects. Therefore, those lots are specifically within the responsibility of the Department concerning plat approval (Section 69-5002 (1), R.C.M. 1947). And because these lots are part of the overall Western Sunset proposed development, the entire Western Sunset development of 14 lots is subject to this department's jurisdiction as far as plat approval is concerned.

Since the submittal is, at this point, a preliminary plat and therefore subject to change or modification it is possible that the developing organization may separate the proposal into phases and/or different subdivision. Should this occur and lots 3-14, inclusive, platted separately for purposes other than condominium use, they would be outside the scope of this Department for pusposes of plat review and approval. Lots 1 & 2 would still be subject to 69-5001, et. seq., as condominiums.

Questions have also been voiced as to whether this project is, in fact, a planned unit development or a true condominium development. Such a question is beyond the scope of this office. The project is called a condominium because this is what the developer said it was, and this is what it has been called on all documents submitted. Any change or verification must therefore await further evaluation.

LOCATION AND SIZE

The proposed Western Sunset Condominium Development block is located approximately 7 miles northwest of Dayton,Montana, in the east shore area of Lake Mary Ronan. Montana secondary road 352 provides access into this region from U.S. Highway 93. Proctor, Montana is the nearest "postoffice" community (5 miles distant along Montana 352) with Polson, Montana, 34 miles to the south, the nearest incorporated townsite. Kalispell, Montana is approximately 40 road miles to the north.

As stated in the introduction two of the 14 lots in this subdivision have been proposed for development. The developer has referred to this project as a "condominium" project, however the structures being proposed are not entirely the multiple-family units commonly associated with the word condominium, but instead include both multiple family units, large single family structures, and commercial facilities. These commercial facilities, which will be open to the general public, are also an integral part of the plan for the immediate utilization of the two lots. The project can be considered to be a permanent residence or recreational or retirement home community.

For complete orientation as to location, please see the map enclosed in the back of this report. Lot 1 and Lot 2 are the two parcels under consideration.

LOT 1--- 12.3 ACRES (Calculated using the high water mark of Lake Mary Ronan as the western boundary).

33 SINGLE FAMILY UNITS x 1 = 33 family units
6 MULTIPLE FAMILY UNITS x 4 apartments/unit = 24 family units
1 LODGE BLDG. including a 150 person capacity dining facility, a 50 person cocktail lounge and space for 8 to 16 guest bedrooms. Recreational facilities on Lot 1 include a boat ramp/mooring dock and swimming pool.

Note---The single family units are to be two bedroom (21 units) and three bedroom (12 units). Using a numerical bedroom cumulative as a density guide, Lot 1 is being proposed for 118 bedrooms. At two people per bedroom this can be expressed as a peak potential of 236 people (19 people per acre) per 24 hour residence not including day use visitations at public facilities.

LOT 2--- 14.0 ACRES (1200 feet from Lake Mary Ronan shoreline at its nearest point)

56 SINGLE FAMILY UNITS The single family units on Lot 2 are to be two bedroom (38 units) and three bedroom (18 units). Again using bedroom potential as a density guide, Lot 2 is being proposed for 130 bedrooms. At two people per bedroom such a design indicates a possible 260 people (19 people per acre). Lot 2 had no included recreational facility, however tennis courts are indicated in an adjacent area on Lot 3.

The matter of density can be somewhat clarified by pointing out that 56 residences on 14 acres is equivalent to 1 residence on each 11,000 ft ^{2}. If the project were a true land division with a web of fixed boundaries each lot would, by regulation, require a minimum of 20,000 ft ^{2}.

LAND USE

Lot 1: For those familiar with the Lake Mary Ronan, Lot 1 is essentially the same ground area that was previously known throughout Western Montana as Campbells Resort. The large old log lodge which made this facility a local landmark burned to the ground several years ago, and the resort has seen comparatively little activity since. The various support cabins and guest facilities are now being moved to new locations or are being destroyed. Prior land use for recreation is an established fact; only the degree of utilization is being altered. In addition, the Lot 1 area has been classified for many years by the Lake County Assessors office as villa and small tract land.

Lot 2: The 14 acres in Lot 2 is primarily timberland, long since logged over and now is in a second generation timber phase. The ground would probably be best classified as forest land with use for general outdoor recreational purposes.

To complete the record, most of lots 6, 8, 10, 12, and 14 were cleared by Mr. Fred Campbell to provide a light aircraft landing strip for the Lake Mary Ronan area. The year was (about) 1966 and the project was abandoned when it became known (wind currents, terrain, etc.) that the strip would have very little potential even with the expenditure of large sums of money. However, the land was cleared, and clearing is readily apparent when driving into the area. On balance, this facility has usefullness only in an extremely immediate emergency situation.

Land use plans for lots 3 thru 14 have not been proposed because of the vagarities inherent in a development of this type. Currently the time line is projecting 12 months, after approval, for the completion of Lot 1, and 12 months following that for the completion of Lot 2. Any further development would be based on marketability, client acceptance and/or future cost factors. It has been "suggested" that plans for the remainder of the development will revolve around a 4 residences to the acre density factor.

There is no existing comprehensive plan or land use regulation for the proposed development area.

ACCESS AND AREA OWNERSHIP

Except for small lakeshore lots to the south of Lot 1, virtually all of the ground surrounding the Western Sunset Subdivision is owned by the Glacier Park Company. The only significant exception to this is that land on the extreme east end where 240 acres owned by James M. Grant abuts against the Western Sunset property. Other ownerships in the near vicinity include the State of Montana, however the development will not affect access to any public land. The Lake Ronan State Park is less than 300 feet to the south along the area access road. It should also be mentioned that the area is not within the boundaries of the Flathead Indian Reservation.

Montana secondary 352 has been mentioned as the access into the lake area. It is terminated however, approximately one mile short of the subdivision development. From this termination to the development a declared---not dedicated---one mile segment of 40 foot wide county road traverses up to the subdivision boundary. At this point a 60 foot wide dedicated county road strikes north along the east side of Lot 1. At the intersect of Lot 1 and Lot 3 a turnoff is being planned from this dedicated county road into the Lot 2 thru 14 block. This planned road (serving Lot 2 plus the remainder of the subdivision) will be 60 foot wide and constructed to Lake County specifications. When complete, it will be dedicated to Lake County. Except for this lateral, all other interior roads serving the condominium units in both lots 1 and 2 will be private roads which will eventually become the responsibility of a Homeowners Association. Bituminous surfacing will be provided to meet the Department of Health and Environmental Sciences guidelines for the prevention of water pollution and erosion as well as meet the requirements for dust control.

With regard to the 5.4 mile segment from Dayton to that point 1 mile short of the subdivision, the developer has reported that in June, 1972 the engineering division of the Montana Dept. of Highways approved the design of, and authorized the completion of, plans for letting a contract for highway modification along the entirety of Montana 352. The project will consist of paving and improving vertical and horizontal alignment for a two lane highway. This plan will also require aquisition of some new right-of-way and the development of drainage features.

The date of contract letting for this road project is scheduled for July, 1975. This date is, however subject to change, availability of funds, right-of-way problems and utility relocations. Right-of-way negotiations are presently underway, but some condemnation cases are foreseen. If construction were to begin in July or August of 1975, work would undoubtedly carry over into the next season, and probably be completed in the summer or fall of 1976.

Such an improvement will alleviate the prime dust and traffic safety problem that could be associated with this proposal if the road were to remain as it is. The developer has also estimated that the completion of Lots 1 and 2 will increase traffic flow on this roadway an average of 50 vehicles per day. An estimate as to the traffic increase as the result of the equivalent development of the balance of the subdivision simply would not be possible until a master plan for the entire subdivision evolves.

In summary it would appear that road facilities adequate to meet the needs of any great increase in traffic flow, has been compensated for except for that 1 mile segment of 40 foot wide declared county road between the end of 352 and the nearest point in the Western Sunset Subdivision. Any improvement to county standard in this section would require the cooperation of the Glacier Park Co., a wholly owned subsidary of the Burlington Northern Railroad. At this moment, no such plans exist for such improvement.

ENVIRONMENTAL INFORMATION

Topography and Geology: The most prominant land-form feature in the Western Sunset area is Lake Mary Ronan, a 1506 acre high-value recreational lake which provides Lot 1 with 900 linear feet of shoreline frontage. Lot 2, the second phase of the development, is 1200 feet from the lake at its nearest point.

Geographically the project area is underlain in its entirety by undifferentiated Quatenary glacial deposits including silts, clay, drift, gravel, and alluvial fan material. From drilled well logs in the area it appears that solid bedrock (probably glaciated Ravalli argillite) is, at least, 100 feet below the surface of the land in the Lot 1 and Lot 2 areas. The glacial debris filling this area is thick, reasonably uniform and regionally extensive; blanketing the slot from Lake Mary Ronan all the way down to the Flathead Lake shoreline in the Dayton area. In summary, Lake Mary Ronan appears to be an upland glacial lake remnant (Lake Missoula) set in an ice-formed basin and held in place by a large tight moraine block.

From a topographical perspective the shoreline lot is a broad, near planer-surface which slopes (2 to 6%) uniformly toward the lake until encountering a topographical break in the form of a 15 to 20% shoreline enbankment. At maximum full pool---such as that noted in May and June, 1974, an abnormally high water year---the waters edge is 10 to 12 feet below the "enbankment" crest and that crest varies from 40 to 60 feet horizontally back from the actual waters edge.

For purposes of topographical orientation, some significant elevations are as follows:

Water Line at Autumn Low Level	3700-
Water Line at Spring Full Pool	3702 +or-
Shoreline Enbankment Crest (40-60 feet back from water)	3714
Ground Elevation of Single Family Residences Closest to Water (40-60 feet back)	3714
Average Ground Elevation of Single Family Residences (250 feet back)	3726
Ground Elevation at Point of Planning for Lodge/Restaurant	3723
Ground Elevation of Multi-Family Residence Clusters (350 feet back)	3730
Highest Corner of Lot 1	3753
Ground Elevation of Dedicated County Road on East Side, Lot 1	3730-3750

Lot 2, well back from the lake, is a 1250 ft. x 500 ft. rectangular block in a more nearly "foothill" location. The south three-fourths of the lot is flat to near flat (2% to 5% slope) while the north one-fourth is sited on the side slope of a 5% to 15% moraine mound. The low point in Lot 2 lies near the midline of the lot along the west edge (elev. 3756). This midpoint has some significance because in addition to being the lowest point and apex for drainage from Lot 2 it is the site of a spring which has been used in the past as a private domestic water supply. Flow is low (2 to 5 gpm), but it is an extremely reliable source of water and, as such, has been fenced and protected as much as possible. The spring does not reach the lake on the surface. Instead it flows west for perhaps several hundred feet into Lot 3 and recharges back into the local gravels.

In addition to Lake Mary Ronan this is the only surface water of any kind known to exist in the Lot 1 and 2 areas. Except for where it surfaces nothing is known about this spring. Since it is sited in glacial debris and some distance from solid rock it probably is a type of "ribbon" aquifer providing release for water collected and recharged into the ground from up-country locations on the north of the property.

Orientation elevations for Lot 2 are as follows:

North (high) Edge of Lot 2	3825
Midpoint of Lot 2	3765
Elevation of Spring Site	3756
South Edge of Lot 2	3780
Midpoint on East Edge Lot 2	3770

SOILS AND GROUNDWATER

Soils in the area are deep well-drained, light colored and silty, containing gravel and underlain by grey glacial tills. The organic-rich top soil is generally thin and poorly developed. Their uniformity is broken only by an increase of silt with some clay along the lakeshore reaches, and in a poorly graded "gravel pit" prospected for and lightly mined near the east edge of Lot 2. This gravel pit is the only recognizable geological resource in the entire subdivision area.

Such soils have low agricultural capability except in small generally uneconomic plots. The land does have a moderate timber and/or Christmas tree potential; however, the plat overall potential would have to be evaluated as being severely limited in agricultural value.

Test holes set down in the Lot 1 and 2 area have verified the absence of any over-riding groundwater contamination problem. One hole (in Lot 2) appeared damp and might have accumulated a small amount of water at the ten foot level, but all other holes were totally dry. Since there is one surfacing spring in the area, there also could be other small subsurface spring watercourses that do not surface. However, the "one test hole per every five acres" requirement of this Department makes finding such occurrances very unlikely. Based purely on the soil information submitted and then evaluated in conjunction with the rising topography and moderate permeability of the glacial subsoil it would appear that drainfields could be installed without violating the spatial requirement of the Montana State Subdivision Regulation.

In terms of engineering characteristics (load-bearing, erodability, susceptibility to piping, compaction, etc.) the area would be considered to have only slight to moderate limitation. Percolation rates are neither too high or prohibitively low. Values of 1 inch in 20 to 30 minutes predominated and it can be assumed that any and all soil disposal of sanitary sewages will be made to a 0.9 to 1.0 gallons/ft^2/day design specification.

SURFACE WATER

In addition to being the most significant land form in this area, Lake Mary Ronan is also the most environmentally vulnerable feature touched on by this project. The lake is moderate in size by Montana standards (1506 acres containing 42,700 acre feet) in a 32 square mile drainage basin and it is comparatively undeveloped in terms of shoreline recreational or second-home development. (60 cabins or homesites with possibly 20 of these permanent residences). Yet, the water quality in the lake indicates that this very same lake is in very serious trouble.

The gravity of the problem became apparent as late as 1969, 1970, and 1971 when oxygen depletion conditions at depth coupled with high temperatures on the surface compressed the fresh water fishes (particularly Kokanee Salmon) into a thermocline zone that narrowed from 2 to 4 feet. At one time during this period the "livable" region for such fish was less than 12 inches thick. A massive fish kill was very narrowly averted and even without broad spectrum water chemistry data it was apparent that this condition was a reflection of grossly deteriorating water quality in the lake. Since 1971, this situation has not been as acute and comparative improvement, at least, in the thermocline condition, was noted during the summer of 1974.

Coincident with this 1969-1971 problem was the fact that the State of Montana had heavily logged off Section 16 (west side of the lake) and it was reported that considerable amounts of soil and leachate were discharged into the lake during this time.

Again during this same more recent period it is well documented that cattle have wandered in from adjacent range leases and spent the summer months clustered in the Mary Ronan basin drainage. One investigator estimated that this practice had developed a population equivalent of 500 to 1000 people. In the process creek bottoms and shorelines were often over grazed and over utilized by cattle. Range management surveys have now been initiated by the lessor to bring the area back into a more properly controlled management perspective, but the livestock contributions to the problem prior to recognition must have been significant. In the absence of data to the contrary, the cattle contribution may be excessive even now. Other similar potential contributors included a winter feed lot which operated for a short period right at the mouth of the main surface stram into the lake. (Donaldson Creek) . The U.S.F.S. timber removal operations in the headwaters of Donaldson Creek and the waste disposal practices of some of the shoreline septic tank systems and campgrounds which are suspected of being less than satisfactory.

Cumulatively, all of these abuses and practices have created a water quality problem which may make it difficult to utilize the lakeshore for extensive residential purposes despite the fact that plans for all kinds of waste disposal from new projects could and would meet and exceed State Department of Health regulations and standards.

The complexity of this problem is emphasized with the realization that very little water is discharged out of the lake by surface watercourses. Ronan Creek is the only significant surface stream from the lake and verified flow figures on this stream are very scarce. However, on September 7, 1974 the U. S. Geological Survey gaged the only existing station as 0.220 cfs. Such a flow is equivalent to 99 gpm and it is safe to assume that from September 1 to March 30 of each year, seven months, the tiny flow out will not exceed that figure. On that same September 7th Donald son Creek and Freeman Creek, the only inflowing streams provided approximately 0.155 cfs, or 70 gpm. Such observations have value primarily in emphasizing that the lake is a victim of its own closed topography as modified by uncontrolled abuses that have been accepted as safe and common practice in adjacent areas having entirely different hydrologic characteristics. Lake Mary Ronan is a nutrient trap and the significance of this cannot be over-emphasized or ignored.

To this point observations relating to water quality in the lake have been circumstantial. Long term valid water quality data gathering, accomplished by qualitifed personnel, with approved laboratory support facilities began only 16 months ago and the results of this work are still being evaluated. Base line data for comparative purposes, say 10 to 15 years ago simply does not exist. For any accurate objective assessment of the effect the project would have on water quality in the lake, both earlier values and contemporary values should be available. However, because they are not, the latest study, began July 18, 1973 and completed June 25, 1974 will have to suffice. From the text of this report the following statement has been taken.

. . . . . "Lake Mary Ronan was the least alkaline of the lakes samples in this investigation and had reached an advanced stage of eutrophication. The lake was rich in nutrients, and registered a marked diurinal fluctuation in dissolved oxygen. Nutrient levels were more apparent in blooms of plankton recorded than in direct measurement. The nitrogen fixing blue-green algae were particularly abundant. The zone in the lake with sufficiently high dissolved oxygen and sufficiently low temperature to sustain cold water fishes was very narrow----Unpublished data recorded by Smith and Cousey of the University of Montana Biological Station, 1972 also indicated high levels of nutrients, high algal populations and high coliform counts. Populations of both fecal and total coliform exceeding 1800 organisms per 100 ml of water were obtained from Donaldson Creek. At the rate eutrophication is progressing in this lake it will probably be septic at some time during the next 10-20 years. . . . . "

Further input on the matter of Lake Mary Ronan water quality will be received in the near future. Lake Mary Ronan is one of sixteen Montana lakes which has been included in the National Eutrophication Survey being conducted by the U. S. Environmental Protection Agency. One of the goals of this study is to determine the present nutrient condition and tolerance of this lake as well as to identify source components and analyze the degree of nutrient threat. Three stations have already been located; one each on Ronan Creek (outflow) and on Donaldson and Freeland Creek (inflow). They are to be sampled once a month for 12 months

and the samples analyzed in the E.P.A. laboratory in Corvallis, Oregon. During the summer of 1975 a specially equipped jet helicopter---supplied to the E.P.A. by the Department of Defense---will be landing on Lake Mary Ronan to conduct intensive water quality samplings for analysis in conjunction with data gained the previous year by the stream side input-output samplings.

The results of this study may be too late to have any bearing on the land use decision on Lot 1 and Lot 2 phase of this project; however the E.P.A. work could have considerable influence on the means and methods by which the balance of the lots in the subdivision are utilized.

With such a problem indicated before a project of the potential magnitude of Western Sunset comes into being the question arises as to the impact Western Sunset might have in accelerating this process. Furthermore, an additional question arises as to whether it is possible to reverse this aging process if a project of this magnitude is approved for development regardless of rate at which the balance develops or the steps taken to control the sources of nutrients which might accompany it.

WILDLIFE

The Department of Fish and Game for the State of Montana has indicated that Lot 1 and 2 property is year-round habitat for mountain grouse and whitetail deer. Sometimes moose can be found in the area. The Department's winter range map shows that a portion of this usually is winter range for whitetail deer, especially in the more mild winters. Harrassment by pets or snowmobilers would have a much greater impact on game than the actual siting of houses in the area.

Because of the previous use of the area, as a recreational campground and general recreation area involving roads, logging cuts, and trails, the use proposed should have only a modest affect on wildlife usage. There are no known critical or "key" wildlife areas, such as waterfowl nesting areas, habitats for rare and endangered species, or wetlands. All roads except the boat launch route, will be located a reasonable distance from the lake so as to protect and preserve wildlife in and along the lakeshore.

The impact the project will have on the ability of the lake to assimilate the increased fishing pressure is a point which has not been touched on by the developer in the preliminary assessment. Montana Fish & Game reaction to these same questions was partly speculative in that the last creel census was made in 1968. During 1968, in what was described as a poor fishing success year, the average May to November day saw 124 fisherman using the lake. This "average" use is inflated because the lake also saw 386 fisherman on opening day, and 230 fisherman per day on weekends and holidays.

Since 1968 the fisherman per day figure has definitely increased to a level significantly greater than the old 124 fisherman per day average; however, the actual increase is not based on any statistical data and can only be approximated. Similarly, a regional increase of 500 people---from Lot 1 and 2---generates only an estimate that such a grouping would probably result in a 2 fold (average 248 people) minimum daily average to as much as a 4 fold (500 people) maximum average. Utilization of all 14 lots is beyond sensible projection. Great changes in attitudes, regulations, and use would occur before that point is even reached.

Such an increase as that predicted herein, introduces a new dimension that has had very little investigation in Montana. Lake areas less than 30 feet deep which experience heavy boat activity (boats with motors only) are known to experience increases in turbidity through physical mixing of the lower water column with the upper levels. The release of nutrients from the resuspended solids as well as the effect or interaction of such mixing with the thermocline are factors which have definite bearing on eutrophication rates.

Considering the state of the lake, right now, it is possible that the size and numbers of motor driven boats admissable on the lake should be limited if not completely eliminated. Any two or three-fold increase on a lake as small as this indicates that such an investigation might be mandatory if the eutrophication problem is to be seriously considered by those managing the lake.

Ignoring the effects water quality might have on fisheries management this pressure would irrevocably lead to:

1. Loss of the Kokanee as a viable species in this lake.

2. Increased stocking of a size and (faster maturing) type compatible with existing conditions...i.e. the development of a put and take fishery that would continue only as long as economic conditions permitted.

3. Loss of trophy size fish potential and an average reduction of all keepable fish to a standard + - 10 inch size.

4. Probable conflicts between the fisherman and other recreational users, such as water skiers, for actual use of the water surface.

5. A change in the regulatory management of the lake. This would be found in size limitations, bag limits, angling methods or seasonal definitions.

VISUAL IMPACT

In a development of this type visual impact is of great importance to the developer. To alleviate the fears of the neighboring owners and other users the following statement has been included with the submittal:

. . . . . ."The design of the road system serving the area will be in the best interest of the existing topography preserving the integrity of the environment. Cut and fills will be avoided where possible. All backslopes will be landscaped. Underground utilities will be revegetated. All buildings will be designed and exteriors finished utilizing natural materials to blend in with the natural surroundings, incorporating the use of earthtone color schemes and combining existing vegetation with new landscaping to insure minimum visual impact upon the environment. . . . . "

From the perspective of this office it would appear that because of the high degree of natural enclosure the project at least in Lot 1 and 2, does not project any overriding adverse visual impact. The exception to this is in that Lake Mary Ronan is a major landscape feature, and a certain amount of impact might be expected along the shoreline, however, there does not appear to be any regional long view values jeopardized. Total development of all lots on the same side as Lot 1 and 2 could however negate much of this effort through sheer size.

Plans for physical modification of the shoreline are very modest considering the scope of the project. The former dock and existing boat ramp is to be removed and the shoreline restored. A new improved boat ramp and dock would be installed 80 feet north of the present ramp. No specifications as to length, size, or capacity of boat morage has been given; however, no other alteration of the shoreline or modification of the lake bed is proposed.

VEGETATION

Vegetation in the lake side Lot 1 area is made up of fir and pine together with cottonwood close to the waters edge. Apple trees are found scattered about and a small grove of 13 apple trees exists on the south rim of the lot. Open areas are well grassed over with some brush and seedlings.

Lot 2, the foothill lot, is composed of cutover 2nd growth fir and larch together with scattered pine. Average diameter is approximated to be 4 to 8 inches. Larger fir and larch in the 14 to 16 inch diameter range are scattered throughout.

Structural development and roads will be located so as to minimize damage to tree cover and to protect shoreline vegetation. There is a landscape plan for within the development which includes the planting of trees in open areas. Existing apple trees will be preserved or transplanted to encourage continued growth and use. With the possible exception of these same apple trees, no known critical plant communities exist.

MISCELLANEOUS CAPABILITY FACTORS

The area has no floodplain problem; it is not in a significant groundwater recharge area, and it is not known to include any significant historical feature. The 40 to 50 inches per year of precipitation received is a value in accord with other areas of the Flathead Valley at nearly the same elevation.

It has however, one unique environmental factor worthy of mention. During the last four to five years the Wildhorse Island, Proctor, Lake Mary Ronan lineation has been reported as the focus of an active seismic disturbance. During 1972 this linear zone was said to be the site of the only significantly active fault in the State of Montana. No major damage was reported from this seismic movement, and the strongest effects were said to be felt in Proctor. It was also said to be felt, faintly, in both Polson and Kalispell. No record has been made as to whether movement was noted at Mary Ronan or whether any damage resulted in that area.

No large multi-story buildings are being contemplated and the homes are said to be of wooden construction without dangerous overhanging stone or masonry facades. Being without a building code this is a condition over which no State or County agency has any real control. But it should be noted that the potential for superficial damage does exist, and that the developer should recognize this in his planning options.

WATER SUPPLY-SEWAGE-SOLID WASTE-STORM RUNOFF: PLANNING CONCEPTS

Water Supply: Domestic water for the development is to be supplied by means of a community supply system. Flow for this system is to be provided from any one of the following sources or combinations thereof.

1. Drilled and cased well---Use of water from a drilled well has considerable merit, however the nearest well of this type---½ mile to the northwest---produced only 6 gpm from a depth of 947 feet. Other wells in the area of Donald Creek have yielded much better results (up to 50 gpm) but these locations are over ½ mile away and transmission lines would involve numerous problems including land acquisition, easements and other private agreements.

2. Spring development---The one available spring in the area---earlier mentioned as occurring near the center west line of Lot 2---might be an auxiliary source or it might be researched and developed as the only source. However, the flow is apparently very low, and the aquifer from which it produces is very much unknown. Because the developer intends to surround this spring with residences or individual septic systems a comprehensive hydrologic examination would be necessary before it could be justified for domestic use. Controlled, stored and distributed it might make an excellent source of water for a separate irrigation system.

3. Lake water---The use of water from the lake is a possible but highly unlikely source. Diatoms/and suspended sediment in the spring with algae in the summer and fall would present difficult engineering and economic problems. Taste and odor problems could be noticeable, and complete treatment including heavy disinfection would be required.

The community system to be developed about whichever source is selected will be installed by the developer and will be fully operable at the time of occupancy of any given unit. Upon completion the system will be administered and maintained by the Association of Unit Owners.

In the usual urban subdivision the design of any water supply system is based on one central design criteria; 100 gallons per person per day for domestic use plus a minimum of 50 gallons per person per day for irrigation purposes, providing the developer commits his system to both domestic and irrigation usage. Irrigation estimates and practices were not included in the proposal hence only domestic usage will be considered at this time.

It has also been noted in the Journal of the American Water Works Association and in H.U.D. manuals that rural/recreational developments of the type indicated herein definitely use water in somewhat lesser amounts than the average suburban dwelling. 240 gallons per unit per day (as opposed to 100-150 gallons per person per day) is an acceptable design value for this project, therefore,

57 units on Lot 1 x 240 gallons per day = 13,650 gallons per day maximum
56 units on Lot 2 x 240 gallons per day = 13,350 gallons per day maximum
Lodge Bldg. (restaurant, bar, pool) = 4,000 to 5,000 gallons per day
Domestic Use Lot 1 & 2 = 31,000 Gallons Per Day to 32,000 Gallons Per Day

Assuming storage in excess of 35,000 gallons for fire protection and supply reliability the 31,000 gallons should be yielded up in a daily 16 hour production schedule. This would require a minimum 35 gallons per minute source. Until calculations to the contrary are provided this office, an irrigation peak load of up to 19,000 gallons per day might also be assumed.

Total usage of the existing Lot 1 & 2 proposal could equal as high as 50,000 gallons per day and require a withdrawal in excess of 50 gpm for 16 hours each day.

This potential consumption is laid down in some detail because no such source other than the lake has been noted at this time. And when it is located, the question again arises as to whether withdrawals of this magnitude can be tolerated without additional adverse impact to the water quality in the lake or to other users already dependent on this water.

If this much water is withdrawn for domestic water supply purposes, and the discharge, in the form of waste water, committed to the ground at a point where it cannot return to the lake as groundwater would enough water be removed from the hydrogeologic system to make a significant impact on the existing low exchange rate in the lake. If on the other hand, the removal is cycled through the ground and back into the lake would it be returned in a nutrient enriched condition which would add to the deteriorating water quality conditions?

The preceeding questions are potentially adverse impacts which have not, as yet, been considered in any detail by the existing submittal from the developer. Preliminary requirements show only that the feasibility of the water supply source be demonstrated. With 900 feet of lake frontage, a spring on the property, and untested potential in the subsurface this requirement has been satisfied.

The impact with regard to the development of all 14 of these lots in a similar manner is an impact virtually beyond speculation because of the large undeclared multiple which would be applied to all calculations. It would appear that development of any non-damaging water supply system might require that flow be brought in from a source far down the hydraulic gradiant from Lake Mary Ronan or from a totally separate drainage area.

Preliminary data also suggests that the existence of a 1500 acre lake in this basin may be illusionary. The basin may very well be water deficient, at least in terms of the usage now being projected. A basin water management survey, including allocations and formation of a groundwater conservation district may be in order if the various existing uses, including the fresh water fishery, are considered equally.

Sewage Disposal: It has been proposed that sewage be disposed of by any one, or combination thereof, of three different system approaches. These are indicated as,

1. Individual sewage disposal systems consisting of septic tanks and drainfields for individual structures or combinations of individual structures.

2. Incremental pumping stations for lifting septic tank effluents to designated absorption field areas more remote from the shoreline.

3. Total sewer system collection lines to a central pumping station for transfer to a central treatment facility. Ultimate disposal of effluent for such a sewage treatment plant was not included in this proposal. The cost of installing the system or systems will be borne by the developer.

Installations would be designed and installed by licensed engineers and contractors. These systems to be completed and operable prior to occupancy of any unit. The systems will be administered and maintained entirely by the developer; upon completion of the development, the system or systems will be owned, administered, and maintained by the Association of Unit Owners.

The previous sections on geology and soils have described the physical condition of the land in order to establish facts relating to the observation that septic systems and absorption drainfields could be installed within the regulatory framework of existing subdivision law. Drainfields would be larger than usual because of the established application rate of 0.9 gallons per ft^2 per day, however, there would be no encroachment on groundwater tables and fields could easily maintain the required 100 foot spacing to all surface water occurrances. The sole exception

to this probably would be the Lodge building housing the restaurant, lounge, guest house, and swimming pool. The effluents from this high volume source would require both a satisfactory field site plus a location of equivalent size for use in the event of failure. Under these conditions pumping back into the Lot 3 area would be required. If spatial arrangements are too difficult for some of the multi-family units these could be included on the pump-back system in order to provide adequate drainfield space for the individual residences on Lot 1.

Proposal #3---The central sewage treatment option---might be difficult to engineer because of the difficulty in disposing of effluent from this facility. A no-discharge seepage-evaporative stabilization lagoon would require 10 to 15 acres of land which would continue to discharge, in part, into the subsurface. Trench disposal from the sewage treatment plant is impractical because of size requirements and risk; spray irrigation is not advisable because of the limitations of weather.

Environmentally the prime question does not relate to whether the sewage systems can meet regulator criteria---they can---but, whether these same sewage systems will add nutrient to the Lake Mary Ronan system. This then is a question of what happens to effluents discharged into the soil. Any drainfields in Lot 1---100 to 600 feet back from the shoreline---probably would find nutrients flushing back into the lake system. However, nutrient-rich effluents discharged into the soil near the center of say, Lot 6 would be over 2500 feet from the shoreline. Normally, surface topography is a reasonably safe indicator for lakeshore ground water gradients but the location of this project area along the flank of an apparently homogeneous glacial "dam" suggests that there could be just as easily seepage from the lake through the till down toward the southeast. The gradient would then be away from the lake and not into it.

If the developer elects to pump sanitary sewage back into the property, it would be unproven and unfair to assume that such effluents would add to the problems in the lake. To be objective, any potential back lot disposal areas should be tested with drilling equipment and the direction and elevation of subsurface flow identified. Until this is done it will be difficult if not impossible to assess the impact that sewage will have on Lake Mary Ronan if a pump-back system is utilized.

Solid Waste: Solid waste will be removed by the private collector now serving the Proctor-Ronan area. Garbage trucks equipped to handle large box type containers will be the method of collection with ultimate disposal made at the landfill dump near Elmo.

Land owners within the area are assessed in the Lake County Refuse Disposal District which utilized the Elmo Landfill. The developer has indicated that the Lake County Sanitarian has already provided assurrance that no problems would be expected from the volume produced by the proposed Lot 1 & 2 development.

Storm Runoff: Moderate storm drainage has and will percolate into the ground. Heavy runoff and/or runoff resulting from construction and the surfacing of ground area by roads, parking, houses, etc. is to be directed into existing or constructed

drainage swales. Silting ponds will be utilized whenever necessary to prevent the discharge of suspended solids into the lake water. This factor does not appear to be a serious problem at the development, however, any increase in runoff due to covering the ground with impervious cover will have an incremental effect on water quality in the lake. This will be especially true if landscaping efforts become elaborate and fertilizers, pesticides, and herbicides are used to control and enhance the local human environment.

COMMUNITY SERVICE CONCEPTS

Utilities: The submittal indicates that the Flathead Irrigation Project, Bureau of Indian Affairs has the capability and willingness to provide electric power over existing area power lines. Power lines will be placed underground from their source on the subdivision right-of-way to the building unit location. Telephone will be provided over existing lines by Northwest Telephones Systems, Inc. Communications cable will also go underground from the source on the subdivision right-of-way to the building unit locations.

Postoffice: A U. S. Postal Service station serving this area is now located at Proctor.

Emergency Services: Fire protection will be provided by a recently formed volunteer fire department with vehicles and equipment located in Proctor, approximately 5.2 miles away. The department is equipped with a 6 x 6 truck with 1500 gallon capacity. Additional on site fire equipment will be provided by the Association of Unit Owners.

Police protection will be the responsibility of the Lake County Sheriff's Office. Medical and ambulance service is available either from Polson, 34 miles to the south or Kalispell, 40 miles north.

It is the developers assessment that no change in present personnel or facilties can be anticipated as a result of the proposed Lot 1 & 2 development.

Schools: Because it is assumed that the development will primarily attract retired individuals with few school age children the impact on schools is seen as nominal. For those families that do have children of the appropriate age, grades 1, 2, & 3 will be available in Rollins (12.7 miles north), grades 4, 5, & 6 in Proctor (5.2 miles) grades 7 and 8 in Dayton (7.7 miles) and grades 9-12 in Polson (34 miles south).

Recreation Facilities: All lakeshore and open space in this subdivision for condominium purposes are common elements dedicated to the Association of Unit Owners in perpetuity for parks and playgrounds. Facilities are anticipated to include a swimming pool, a tennis court area, a boat dock, and a putting green in addition to miscellaneous small game courts.

During the winter cross-country skiing and snowmobiling will probably be available. Full utilization might also generate a constituency in favor of a down hill skiing facility. Such a secondary impact is beyond the planning or responsibility of the present developer. It merely exists as a potential spin-off anticipated from the existence of a recreationally oriented population base.

ENVIRONMENTAL IMPACTS

Adverse Impacts: Potential impacts from a project the size and scope of the Western Sunset Development is implicitly far reaching and complex. The more obvious serious factors include:

1. Accelerated eutrophication of Lake Mary Ronan and an irreversible deterioration of water quality in said Lake. No one problem such as sewage or irrigation practices will be responsible for this; it will be a combined result of human density and proxemity in a nearly closed system.

2. Loss of Lake Mary Ronan as a truly outstanding fresh water fishery either through water quality deterioration or over utilization.

3. Interruption of the basin hydrological system to the detriment of other users now dependent on water in or from the lake.

4. Over use of limited recreational resourced in the area.

5. A startling alteration of existing population density and pattern of home use.

Nominal Impact:

1. The restriction of management options for otherland owners in the area.

2. The creation of a wide-spectrum of secondary impacts in the cultural, social, and economic areas. This would include the effect on schools, and services such as telephone, power, fire protection, road maintenance, and law enforcement. Total development of all lots would take some of these factors out of the nominal impact area and into the adverse category.

3. Loss of timberland potential.

4. Loss of winter game range stability.

5. Development of a traffic/highway problem in thatl mile length of roadway between the end of Montana 352 and the subdivision dedication. Impact could be lessened by the acquisition of additional width from the Burlington Northern Co. and improvement to acceptable standard.

THE IRRETRIEVABLE COMMITMENT OF RESOURCES

Water quality in the Lake, loss of the fresh water fisheries and the commitment of land to urbanization are those resources committed or brought to the threshold of an irretrievable commitment.

These effects could be temporized if the developer were to sidestep some of the more urgent problems by producing a water source below or outside the existing Lake Mary Ronan hydrologic regime, and if he were to discharge all effluents of this use into the ground at a location proven to be beyond any return to the Lake Mary Ronan lake water. These actions presuppose that the entire basin will revert to management practices directed toward eliminating watershed and shoreline abuse. Of course, this problem existed prior to this new development submittal. The current proposal merely eliminates whatever margin for error has existed up until this time.

Alternatives

1. Conditional approval based on the submitted prospectus which appears to substantiate that a domestic water supply is available and that sanitary sewage can be disposed of in accord with the Department of Health Subdivisions criteria. Final approval would be issued upon receipt of, and acceptance of, detailed plans and specifications for satisfactorily implementing the water supply and sanitary sewage planning concepts.

2. Interim approval developed around the condition that the water supply must be brought in from a source which would not influence either flow or quality in Lake Mary Ronan; and that sewage effluents must be discharged into the ground in an area where the ground water gradients prove beyond reasonable doubt that such effluents will not return to Lake Mary Ronan either on the surface or through the subsurface.

3. Disapproval with an assurrance to the land owner that the Department of Health will be much more inclined to review any new proposal in a more favorable light as soon as a comprehensive plan is formulated by the Lake County authorities. Densities, land use and the limits of advisable growth within the framework of acceptable impact is absolutely essential if risk is to be removed from the development of the Lake Mary Ronan drainage basin.

4. Disapproval of the proposal as now submitted with a recommendation to the land owner that a new proposal be resubmitted which is more in tune with existing land use and density patterns. The void created by the loss of the Campbell Lodge complex is one that could, possibly should, be considered and filled in an appropriate manner. However, the sheer magnitude of this proposal both in the real Lot 1/Lot 2 phase and that which is implied contains an immutable environmental risk factor which appears to be beyond any prudent acceptance by a responsible review agency.

Information provided to this writer in the preparation of this statement was secured from the following individuals, and/or agency representatives:

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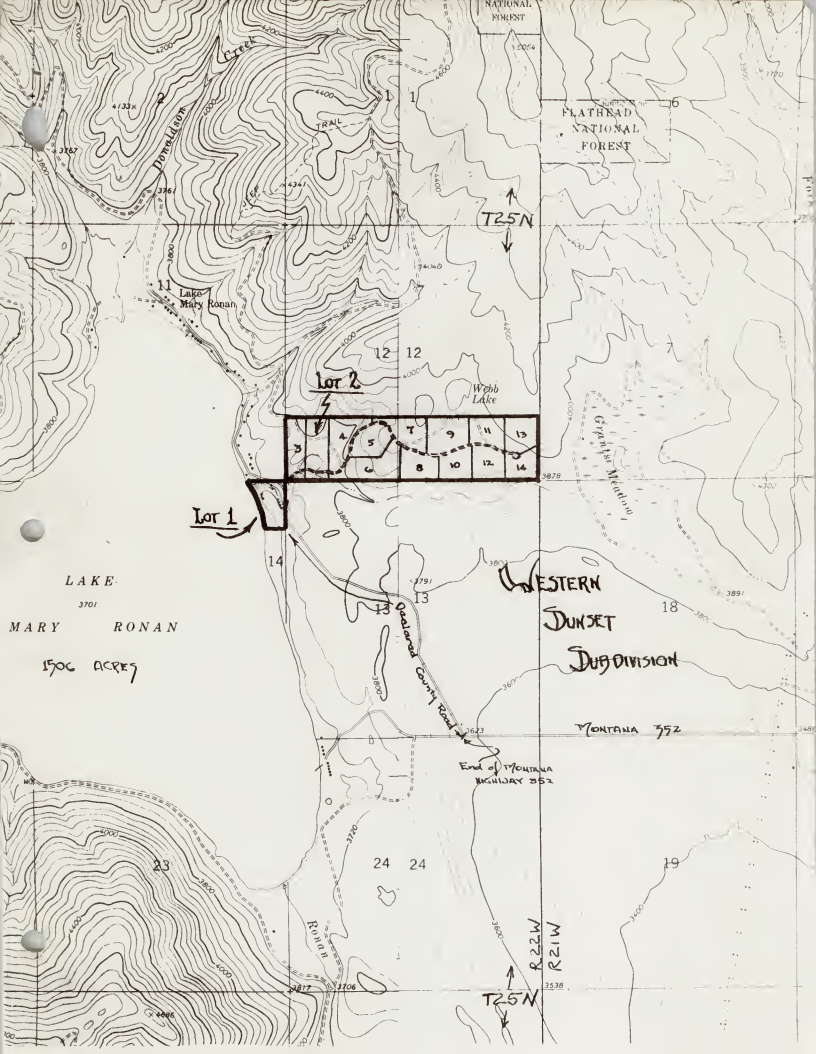
Richard Klinger, Legal Counsel, Montana State Dept. of Health, Helena
Robert Domrose, Montana Fish & Game Biologist, Region One, Kalispell
James Keithley, Div. of Construction, Kalispell Div., State Highway Dept.
Abe Horpestad, Ph.D., Limnologist Specialist, Montana State Dept. of Health, Helena
Dave Erickson, Lake County Planning Director, Box 766, Ronan
Al Hawkaluk, R.S., Lake County Sanitarian, Box 1210, Polson
U. S. Geological Survey, Water Resources Branch, Kalispell

Numerous regional and local resource publications were consulted in the search for supplementary information. Two reports, in particular, provided specific local corroborative data:

1. Lake Mary Ronan Summer Creel Census: A job progress report by the Montana Fish & Game Department, Region One. For a period covering April 1, 1968 to March 31, 1969 and submitted by Robert Domrose, Kalispell, Montana.

2. Flathead Valley: E.P.A. Small Lake Study-Lake Mary Ronan: A physical-chemical water quality survey by contract for the Montana State Department of Health and Environmental Sciences. For a period covering July 1, 1974 to June 30, 1974 and submitted by Dr. Lawrence Sonstelie, Creston, Montana.

This Draft Impact Statement was prepared by Wilbur O. Aikin, a Professional Engineer and Economic Geologist on the staff of the Montana State Department of Health and Environmental Science Department in Kalispell, Montana.


NATIONAL FOREST
FLATHEAD NATIONAL FOREST
Creek
Donnelly Gulch
TRAIL
T25N
Lake Mary Ronan
Webb Lake
Lot 2
Lot 1
LAKE MARY RONAN
1506 ACRES
WESTERN SUNSET SUBDIVISION
Flathead County Road 82
MONTANA 352
End of Montana Highway 352
R22W
R21W
T25N
RUNNER